

# CALFED Bay-Delta Program

## FINAL Conveyance Program Program Plan Year 8 (State FY 2007-2008; Federal FY 2008)

Implementing Agencies:

**California Department of Water Resources  
U.S. Bureau of Reclamation**

June 7, 2007



# Introduction

This Conveyance Program Plan identifies the CALFED Program activities that are scheduled to be completed during State Fiscal Year (FY) 2007-2008 and Federal FY 2008. The Plan also describes the accomplishments made during the previous year.

The goal of the Conveyance Program is to identify and implement water conveyance modifications in the Delta that will:

- Improve water supply reliability for in-Delta and export users
- Support continuous improvement in Delta water quality for drinking-water purposes
- Complement and, where possible, improve the ecosystem restoration

The Stage 1 strategy for the Conveyance Program is to develop a through-Delta conveyance alternative based on the existing configuration of the Delta with some modifications. As envisioned, moderate construction in the south and, possibly, the north Delta would occur within the first stage to improve conditions for the ecosystem and water management. The Stage 1 effort also includes studies and evaluations of major conveyance features to determine feasibility and, if feasible, allow for the projects to be ready for permitting and construction in later stages of the CALFED.

The programs, projects, and evaluations contained in the Conveyance Program are:

## **South Delta Actions**

### **South Delta Improvements Program**

Increasing the permitted State Water Project (SWP) Delta diversion limit to 8500 cubic feet per second (cfs) and installing permanent operable gates in the south Delta

### **Clifton Court Forebay (CCFB) Fish Screens/10,300 cfs**

Constructing a new screened intake to CCFB and increasing the SWP diversion limit to 10,300 cfs

### **Tracy Fish Test Facility**

Constructing a test facility at the Central Valley Project (CVP) Tracy pumping facilities

### **Lower San Joaquin Flood Improvements**

Improving flood protection and ecosystem

## **North Delta Actions**

### **Delta Cross Channel Re-Operation**

Evaluate and implement operations to improve fish protection and improve water quality

### **Through-Delta Facility Evaluation**

Evaluate the feasibility of a screened diversion up to 4,000 cfs from the Sacramento River to the central Delta

### **Franks Tract**

Evaluate flow and salinity to improve fish protection and improve water quality – a project component of the Water Quality Program

### **North Delta Flood Control and Ecosystem Restoration Improvement Program**

Design and construct floodway improvements in the lower Mokelumne River and Georgiana Slough areas

## **CVP/SWP Intertie Actions**

### **Delta Mendota Canal/California Aqueduct Intertie**

### **CVP/SWP Clifton Court Forebay Intertie**

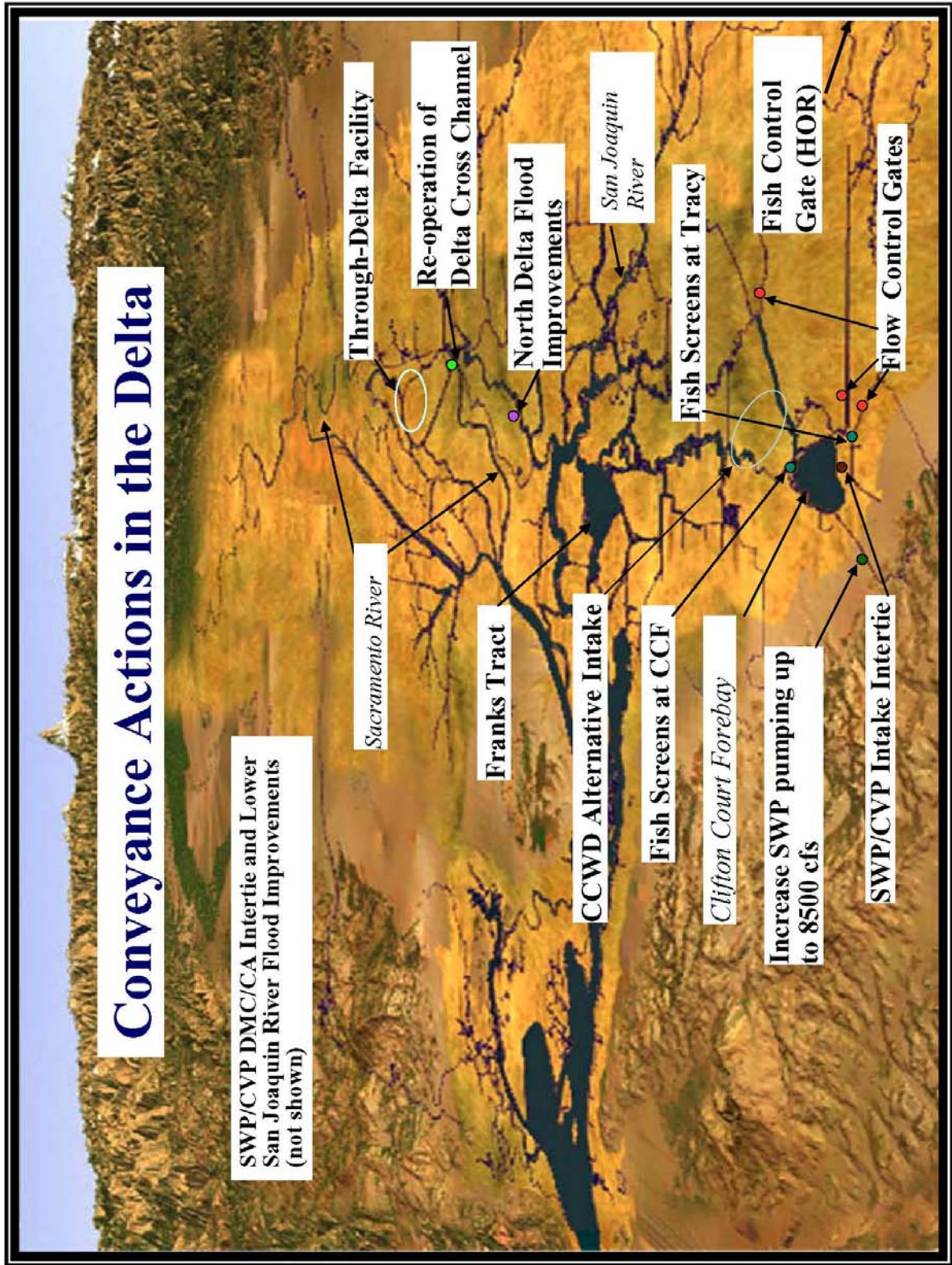
There are also several additional actions under the Conveyance Program which are also contained in the Delta Improvements Package (DIP). These actions and the program within which they are incorporated are:

- Study of South Delta hydrodynamics to better understand how flows in the Delta affect water quality and fish to determine areas for improvement (CCFB Fish Screen/10,300 cfs);
- South Delta Fish Facility Improvements and Collection, Handling, Transport and Release Study to evaluate and implement improvements in existing SWP and CVP fish salvaging facilities to increase the survival of Delta fish (CCFB Fish Screen/10,300 cfs);
- Improving the integration of the operation of the SWP and CVP by providing stored CVP water for SWP Delta water quality requirements and SWP Delta export capacity to pump CVP water for wildlife refuges (South Delta Improvements Program).
- Improving and protecting the drinking water quality of existing Contra Costa Water District (CCWD) Delta diversions (CCWD Alternative Intake Project)

The “Complementary Actions” contained in the CALFED Program ROD for the Conveyance Program are the Temporary Barriers Project and the Sacramento and San Joaquin River Comprehensive Study. The Comprehensive Study was completed to an interim level with release of a December 2002 interim report. The report “sets the foundation for future modifications to the flood management system”. The Temporary Barriers Project continues as an annual activity in the South Delta and is included in this program plan.

A figure showing the geographic distribution of these actions is presented on the following page.

# Conveyance Actions in the Delta



# Priorities for FY 07-08

This section discusses the priorities for the Conveyance Program for FY 07-08. Factors considered in establishing priorities are the need for information or study to inform the through-Delta conveyance alternative, the potential of activity to help meet CALFED Program objectives, the timing of the implementation of a proposed project, and the availability of funding for this year and future years.

Top priority actions for FY 07-08 focus on continuing to implement improvements in the south Delta for local water level, water quality and salmon protection (the South Delta Improvements Program), conducting a regional hydrodynamic and fish study for the Delta Cross Channel, through Delta Facility and Franks Tract projects, and completing studies and study reports on improvements to the Delta fish facilities for Delta smelt survival (the Collection, Handling, Transport, and Release (CHTR) study).

The proposed project under the SDIP has a physical/structural component and an operational component. The operational component addresses increasing the allowable SWP Delta export limit to 8500 cfs. The physical/structural component incorporates dredging, extension of agricultural intakes, and the installation of permanent, operable gates at four locations in the south Delta. The final SDIP EIS/EIR, and the associated Record of Decision and Notice of Determination, will provide decisions regarding the physical/structural component only. A subsequent public process is planned to address the operational component (SDIP Stage 2). A Cease and Desist order recently adopted by the State Water Resources Control Board (SWRCB) requires the Bureau of Reclamation (Reclamation) and Department of Water Resources (DWR) to remove a threat of not complying with water quality standards in the south Delta by July 1, 2009. The permanent operable gates are the means for meeting this order. To meet the deadline, the Record of Decision/Notice of Determination (ROD/NOD) would have required completion by October 2006. The Department will ask for an extension to meet this compliance deadline.

Key elements of the through-Delta conveyance alternative are the Delta Cross-channel (DCC) Re-operation, the Through-Delta Facility (TDF) evaluation, and the Franks Tract Project. The Franks Tract Project is contained in the CALFED Water Quality Program. Studies of proposed facilities or DCC operations have provided information regarding potential water quality improvements and effects upon flow and fish. They also have pointed out the need to understand regional flow, water quality and fish movement in the Delta. As a result, flow and salinity monitoring stations are being installed in the north and central Delta with data collection to begin July 2006 to support a regional field study of flow and water quality in FY 06-07 and fish movement, flow and water quality in FY 07-08.

Flow and water quality analyses will be conducted in mid-2007 based on data collected during July 2006 through March 2007. In addition, information regarding water quality effects of proposed operations of the DCC, TDF, and Franks Tract (independently and in combination) will be developed in FY 06-07 using 2-D computer simulations. The simulations are designed to refine and expand upon the early assessments of the potential water quality improvements associated with these projects. These analyses will be incorporated into a report to be completed by Fall 2007 which will summarize the studies and conclusions to date and inform the "End of Stage 1" decision.

The regional study of fish movement, flow, and water quality is planned for October 2007 through April 2008. Reports incorporating this information and making recommendations for the DCC and the TDF would be completed by late 2008. Activities in FY 06-07 include completion of the regional study description and a fish behavior study at Clarksburg. These activities and the monitoring and 2-D

computer simulations are high-priority actions for FY 06-07 because of their importance to the recommendations on the DCC, TDF, and Franks Tract project.

The Delta smelt Collection, Handling, Transportation and Release Study is designed to identify improvements to the process of salvaging and releasing Delta smelt diverted into SWP and CVP facilities. This information is especially important given the population decline of Delta smelt. In addition to data collection, three elements of the study are planned for completion on FY 06-07. They are studies on predation, acute mortality and injury, and stress. The CHTR study is expected to be completed in 2007 and is funded by Proposition 13 and State Water Project funds.



# Accomplishments

## Conveyance Program Accomplishments in Year 7

**South Delta Actions** – to increase State Water Project (SWP) and Central Valley Project (CVP) export capability, improve the Delta ecosystem through fish protective measures, and ensure that local in-Delta agricultural water needs are met.

### South Delta Improvement Program - 8,500 cfs and Permanent Operable Gates

Activity Undertaken: Preparation of Final EIS/EIR; certify the document. Complete the ASIP. Initiate ESA/CESA consultation on the construction and operation of permanent operable gates in the South Delta.

Accomplishments: ESA Consultation was initiated on June 5, 2006. Final EIS/EIR was certified December 15, 2006. Public Review of Final EIS (NEPA only) (Dec 2006-Jan 2007)..

Unfinished portion of activity/rationale: ESA/CESA consultation must be finished before any other permits are granted. Stage 1 includes only the Physical/Structural component of SDIP and delays implementing the 8,500 cfs portion of the project until more is known about the Delta Pelagic Organism Decline. Once consultation is concluded, a record of decision and notice of determination will be issued. OCAP consultation is expected to continue through mid 2008, so the project may be ready to construct by December 2008. Stage 2 of SDIP would commence at some time in the future.

### Clifton Court Fish Screens and 10,300 cfs:

Activity Undertaken: (The effort to increase the export capability of Clifton Court Forebay to 10,300 cfs has been deferred until methods for successfully screening fish or reducing predation in the forebay are identified.) Work on a multi-year fish and hydrodynamic study in the south Delta. Study work includes: field studies to collect larval fish, zooplankton, water quality, and hydrodynamic data; diet analyses of key pelagic species; and exploratory salvage analyses. Also, the South Delta Fish Facilities Forum agreed to study ways to reduce fish predation in Clifton Court Forebay with the existing screening facilities. (This effort is referred to as the South Delta Fish Facilities Improvements in the Delta Improvements Package. One alternative to be considered is referred to as the “short circuit” alternative.)

Accomplishments: As part of the multi-year fish and hydrodynamic study in the South Delta, a preliminary report (IEP newsletter) was prepared on larval fish behaviors in the South Delta. The preliminary report (IEP newsletter) discussed decadal salvage patterns with regards to hydrodynamic conditions (i.e., E/I ratios) and night-day periods. Work on the steelhead predation study, as recommended by the South Delta Fish Facilities Forum, included preliminary evaluation of acoustic tagging and monitoring.

Unfinished portion of activity/rationale: Study actions are on schedule.

### Tracy Fish Test Facility:

Activities Undertaken: On-going research activities to improve fish handling and operations of the TFCF. Replace trashrack cleaner. Research new primary and secondary louvers and cleaners. Replace fish haul trucks and transfer bucket. Fill in the abandoned intake channel (AIC). Construct new research building. Renegotiate the Tracy Direct Loss Mitigation Agreement. Working on three fish studies as part of the CHTR Study; Predation, Delta Smelt Acute Mortality and Injury, and Delta Smelt Stress study. Also working on two elements of the New Technology portion of the CHTR Study.

Accomplishments: Conducted research activities on site and in lab related to delta smelt salvage factors, debris collection, predation control, fish hauling criteria, Chinook salmon handling stress, fish passage, hydraulic analysis, and water chemistry. Awarded contract for replacement of trashrack cleaner. Completed lab testing of prototype louver cleaners to be considered for use. Purchased new trucks. Awarded contract for fabrication of new truck tanks and transfer bucket. Publish various Tracy Research Volume Series. Updated Tracy Research website. Continue to negotiate a new Direct Loss Agreement and identify a source of funding. Department of Fish and Game studies are underway and have been collecting data. Data Collection for all 3 DFG CHTR studies to be completed by the end of 2006. Equipment for the New Technology Element 2 Study has been installed and data collection has started. Element 3 is currently being installed with data collection scheduled to start in August 2006.

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Unfinished portion of activity/rationale: Perform additional efficiency studies for delta smelt under different pumping scenarios. Consider additional debris handling improvement measures. Continue to track/analyze predator behavior and implement improved predator management measures. Continue to conduct fish passage trials with Crabzilla to demonstrate safe passage of fish. Conduct field tests to validate model for expanded loss of fish during louver cleaning operations. Demonstrate with field tests or previously collected blackfish data that the new transition boxes are as proficient as the old ones. Continue to consider alternative bypass operations to improve ability to meet D-1485 salvage criteria. Complete fish handling research and consider for implementation. Continue to collect water chemistry data for research purposes and external usage. Need to conduct on-site performance and fish passage analysis for new trash rack cleaner. Need to test new louver cleaner devices in the field. Need to monitor how well the new trucks and transfer bucket work after replacement and fine tune as necessary. Need to obtain funding to conduct feasibility study for construction of a new secondary louver and handling system. Need to complete negotiations and agree upon a source of funding for the Tracy Direct Loss Agreement. Need to continue to publish Tracy Research Volume Series and maintain Tracy Research website.

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#### **Lower San Joaquin Flood Improvements:**

Activity Undertaken: Preparation of concept project documentation for the Lower San Joaquin River in support of federal funding for a USACE feasibility study. Begin study of flood control alternatives and requirements.

Accomplishments: Worked cooperatively with the USACE and the South Delta Water Agency (representing 16 reclamation districts) in the preparation of a San Joaquin River Flood Control study. Draft study document submitted to USACE and DWR by SDWA, including local funding for local sponsorship in the amount of \$0.15 million.

Unfinished portion of activity/rationale: Study work not begun because the federal funding for feasibility concept study was not approved. No funding for this effort within DWR. The local sponsor will consider funding preliminary study work should the potential for State or federal funding improve.

**North Delta Actions** – to improve flood protection and conveyance facilities, water quality, Delta fisheries, and avoid water supply disruptions, to increase the water supply reliability for the SWP and CVP and to enhance the Delta ecosystem.

#### **Delta Cross Channel Re-Operation and Through-Delta Facility (Delta Improvements Package):**

Activity Undertaken: Execute a contract for computer modeling evaluation of the hydrodynamics and water quality affects of various TDF, DCC re-operation and Franks Tract alternatives; Install monitoring stations in the central Delta; Execute a contract with USGS to conduct a regional field study for water quality, flow and fish monitoring and the associated analyses; Enter into an agreement with the Department's Division of Engineering for conducting a reconnaissance and construction pre-feasibility study for the Through Delta Facility (TDF) project. Complete the administrative procedures, i.e. concept paper, budget change proposal, requesting funds and staff for future years to support the planned tasks for these projects. Frank's Tract: Installation of flow and salinity monitoring stations in the Central and North Delta, hydrodynamic model study of pilot project alternatives for Franks Tract, conceptual study of various alternatives for the preferred pilot project, and testing of equipment to be used in the regional fish and water quality study.

Reclamation completed a Plan of Study in Spring 2007 and initiated a feasibility study in Summer 2007.

#### Accomplishments:

Water Quality Modeling – Significant progress has been made in evaluating water quality impacts and benefits of the TDF and DCC projects. Additional refining of DCC modeling scenarios is in progress and should be completed by June 30, 2007.

Biological Experiments – BDO staff coordinated the Clarksburg Bend Study. USGS successfully conducted the field study and will be providing the results and analysis by June 30, 2007. The goal of the study was to prove existence of a secondary circulation at bends and determine fish behavior under different flow regimes. The results of this study will provide information for a more detailed study at the DCC, scheduled for December 2007.

Agreement with DOE – BDO staff executed an agreement with DOE for work on the alignment, engineering and cost estimate for the TDF. DOE staff is currently working on completing the tasks in the agreement, which should be concluded by June 30, 2007.

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**Frank's Tract (Delta Improvements Package):**

Activity Undertaken: Installed flow and salinity monitoring stations in the Central and North Delta was completed and data is being collected. A fish study was conducted in North Delta to understand behavior of fish in river bends. Analysis of data collected from the experiment will be completed during FY 2006-07. This data will be used in planning a regional fish migration study planned to be conducted FY 2007-08 and will also be used to develop fish behavior algorithms for particle tracking modeling. Four alternatives have been identified for the Franks Tract Pilot Project (FTPP). Hydrodynamic model studies have been conducted for all the alternatives to evaluate their water quality benefits. Conceptual designs for all those alternatives have also been prepared. A Value Engineering Study is being conducted to select a preferred alternative for the Franks Tract Project. A review of literature related to Franks Tract fisheries is being conducted. It will be used to understand the impacts of FTPP on fisheries and to develop operational scenarios to benefit fish. A summary report summarizing all the work done on Franks Tract, Thru Delta Facility and Delta Cross Channel projects is being prepared. It will be submitted for the CALFED end of Stage 1 in September 2008.

Accomplishments:

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**North Delta Flood Control and Ecosystem Restoration Project:**

Activity Undertaken: Preparation of North Delta Flood Control and Ecosystem Restoration EIR.

Accomplishments: Completed the Administrative Draft on June, 2006, and now conducting internal review of the Public Draft prior to public release. Completed rough benefit-cost analysis and initiated refined benefit-cost analysis to be completed by December 2006. Completed Grizzly Slough element refinement including science panel review and hydraulic modeling studies. Prepared and submitted proposal for USACE CALFED Act funding. Completed sediment dynamics modeling. Anticipate completion of Public Draft EIR in fall 2007 and identification of long-term owner and implementation funding source in the first half of 2008.

Unfinished portion of activity/rationale: Implementation funding and long-term owner for North Delta properties not yet identified. DWR staff recommends that if a long-term owner and implementation funding not identified by the time of Public Draft review completion and choice of preferred alternative, DWR resources be diverted to other activities until this project can go forward to completion.

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**Delta Mendota Canal/California Aqueduct (DMC/CA) Intertie Actions**– to consider the need for two specific SWP/CVP intertie projects which physically connect the SWP and CVP facilities.

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**Delta Mendota Canal/California Aqueduct Intertie (Delta Improvements Package):**

Activity Undertaken: Preparation of CEQA and NEPA environmental documentation; completion of inter-agency agreements and permitting; preparation of final design documentation; completion of intertie construction contracting; begin Intertie construction.

Accomplishments: The USBR (Federal lead agency) issued a FONSI and the SLDMWA (State lead agency) issued a NOD, issued final design documentation, completed competitive bidding for construction and awarded a contract for construction. DWR and the USBR negotiated principles of agreement for construction of the intertie. The FONSI was subsequently withdrawn to solicit further comment from interested parties and the public regarding the proposed project and the construction contract was terminated. Preparation of an EIS was initiated.

Unfinished portion of activity/rationale: Construction delayed. USBR withdrew the FONSI March 2006 and cancelled the construction contract pending preparation and approval of a full EIS.

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**Clifton Court Forebay/Tracy Pumping Plant Intertie:**

Activity Undertaken: Work on this project has not yet commenced.

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**Complementary Actions** – to consider actions that were identified in the Framework for Action but were not analyzed in the Final Programmatic EIR/EIS

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**Temporary Barriers Project:**

Activity Undertaken: Coordinate with the VAMP group for the VAMP 2007 experiment. Prepare for the TBP 2007 Installation. Coordinate with south Delta farmers/divertors to monitor past dredged sites, identify potential needs for portable pumps or potential dredging sites. Monitor channel bathymetry of dredged sites.

Accomplishments: Three agricultural barriers were successfully installed in the south Delta. The spring Head of Old River Barrier was not installed due to high San Joaquin River flows. The fall Head of Old River was not installed in 2006 per DFG direction. Portable pumps were not needed in 2006 as flows were high during the summer and water levels remained adequate for agricultural diversions, both at the Tom Paine Slough and elsewhere in the south Delta.

Unfinished portion of activity/rationale: Continue the bathymetry monitoring of the dredged sites, and work with south Delta diverters for potential new dredging sites as needed.

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**Additional Actions Under Delta Improvement Package** – actions to increase water supply reliability, improve water quality, protect important fish species, and maintain the integrity of the levee systems in the Delta

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**Study of South Delta Hydrodynamics, Water Quality, and Fish:**

(See Clifton Court Fish Screens and 10,300 cfs)

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**South Delta Fish Facilities Improvements**

(See Clifton Court Fish Screens and 10,300 cfs)

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**Study of Delta Smelt and Fish Facilities:**

(See Tracy Fish Test Facility)

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**CCWD Alternative Intake Project** – water quality project to protect and improve drinking water quality by relocating a portion of CCWD's existing diversions to a new intake location in the Delta with better source water quality.

Activity Undertaken: Preparation of draft EIR/EIS; circulation of document for public review and comment. Complete the draft ASIP and circulate.

Accomplishments: Completed Draft EIR/EIS and ASIP and circulated environmental documents in May 2006. Comment period closed in late June 2006. Responses to comments and Final EIR/EIS completed in October 2006. EIR Certified by CCWD in November 2006. Final Design initiated.

Unfinished portion of activity/rationale: The project is on schedule.

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**SWP/CVP Integration Plan** - the use of CVP stored water to meet SWP Delta water quality obligations and SWP export capability for CVP south-of-Delta deliveries.

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(Included in the South Delta Improvement Program)

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# Activity

## Conveyance Program Activities Planned for Year 8

**South Delta Actions** – to increase State Water Project (SWP) and Central Valley Project (CVP) export capability, improve the Delta ecosystem through fish protective measures, and ensure that local in-Delta agricultural water needs are met.

### **South Delta Improvement Program - 8,500 cfs and Permanent Operable Gates:**

Activity: Secure all appropriate permits for Stage 1. Purchase land necessary for construction. Advertise and award construction contract. Initiate construction.

Expected Deliverables/Products: 404 Permit, 401 Certification, Section 10 permit, CESA Determination, USFWS Biological Opinion, NOAA Fisheries Biological Opinion, DFG 1601 permit, CVRWQCB Dredge Waiver, AQMD Air Emissions Permit, Contract for construction, and deeds on several pieces of property for permanent gate structures.

Schedule: DWR adopts project, files NOD (TBD); Reclamation issues ROD (TBD); Advertise for construction/supply contract (TBD); Begin gate construction (TBD).

Cost: SDIP staff, final design, and monitoring \$9 mil (SWP) ; Construction costs for Permanent Gates in FY 07-08: \$26 mil (State)

Public Involvement and Outreach: Public Involvement will be a part of the SDIP Stage 2 decision process on 8500 cfs. The public will be given an opportunity to review a supplemental Final EIS under the NEPA and CEQA review periods

Linkages: Environmental Restoration Program Environmental Water Account and the Water Quality Program.

Potential Problems: Acquiring all approvals in Winter 2007 to allow construction of gates components to begin very early in 2008 and gates to be constructed and operable by Spring 2010. (Meeting this schedule is very important to the reliable operation of the SWP and CVP. The SWQCB has issued a Cease and Desist Order to DWR and the USBR to remove a threat of violating south Delta water quality standards by July 2009. The permanent operable gates are required to improve south Delta water quality and remove the Cease and Desist Order. The Department will ask for an extension on the compliance deadline.

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### **Clifton Court Fish Screens and 10,300 cfs:**

Activity: Continue South Delta Hydrodynamics, Water Quality and Fish study, including data and laboratory analyses and report and manuscript preparation. Begin studies under South Delta Fish Facilities Improvements. Finish pilot-scale studies, including data analysis and report preparation. Continue development and implementation of a full-scale study evaluating the pre-screen losses of juvenile steelhead in Clifton Court Forebay.

Expected Deliverables/Products: Two peer-reviewed journal articles discussing salvage and entrainment of fishes in the south Delta. A final DWR Report and one peer-reviewed journal article discussing pre-screen losses of juvenile steelhead in Clifton Court Forebay.

Schedule: Complete data and laboratory analyses and preparation of report and manuscripts. Complete full-scale study including data collection, data analyses, and preparation of report and manuscript.

Cost: Hydrodynamic study: \$0.5 mil (State) for data analysis and report write-up. Predation study: \$1.3 mil (State) for data collection, data analysis, and report write-up.

Public Involvement and Outreach: Continue to present data at local conferences, IEP Asilomar Conference, EWA, CALFED, and AFS national meeting (predation study).

Linkages: Hydrodynamic study - Science program. Predation study - 2004 NOAA Fisheries Biological Opinion and South Delta Permanent Gates.

Potential Problems: Hydrodynamic study - Funding to complete complimentary field work and analyses for USGS (hydrodynamic component). Predation study - Contracts to provide support staff from other agencies. Purchasing delays for acoustic tags used to tag juvenile steelhead.

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**Tracy Fish Test Facility:**

**Activities:** Continue research activities to further analyze the existing facility at current levels of protection and improve screening efficiency. Award contract for new primary and secondary louvers and cleaning systems. Conduct feasibility study of new secondary louver and handling system. Complete construction of new research building. Award contract for development of land (AIC). Execute new Tracy Direct Loss Agreement (TDLA). Publish Tracy Research Volume Series and maintain Tracy Research website. The Department of Fish and Game will complete data collection, analyze data and write reports on the three collection, handling, transportation and release (CHTR) studies. This will include the CHTR Predation Study, Delta Smelt Acute Mortality and Injury, and the Delta Smelt Stress Study. The CHTR New Technologies Evaluation program will continue to collect data on Elements 2 and 3.

**Expected Deliverables/Products:** Continuation/ completion of various research efforts related to salvage improvement of Delta smelt, Chinook salmon, striped bass, and other listed/POD species. Publish completed study efforts in the Tracy Research Volume Series Reports. Begin construction of new primary and secondary louver cleaning systems. Complete feasibility study for construction of a new secondary screening and handling system. Proceed with filling in the abandoned intake channel (AIC). Implement operational guidelines and make payments to the state (DFG) for loss of fish at the TFCF/TPP. Updated Tracy Research website. The Department of Fish and Game will provide Final Reports on the Predation Study, Delta Smelt Acute Mortality and Injury and the Delta Smelt Stress Study. DWR will develop a plan and resource requirements to determine what information is needed to address possible improvement alternatives as part of the South Delta Fish Facilities Improvements project.

**Schedule:** Conduct research activities both on site and in the lab during course of the federal fiscal year. Begin construction of new louver cleaning systems sometime during the federal fiscal year. Complete feasibility study of new secondary louver and handling system sometime during federal fiscal year. Proceed with contract to fill in AIC sometime during federal fiscal year. Make payments to state sometime during the fiscal year towards TDLA. Tracy Volume Series reports to be published and website maintained during the course of the fiscal year. The Department of Fish and Game will complete all data collection for the CHTR studies by January 2007 and provide Final Reports by June 30, 2007. The CHTR New technologies will continue data collection throughout the year for both elements 2 and 3.

**Cost:** \$2.083 mil (federal – in Presidents Budget) to continue/complete studies on site and in the lab in Denver. \$2.2 mil (State) funding for CHTR studies. \$0.24 mil to conduct feasibility study for construction of a new secondary screening and handling system at the TFCF (no fund source identified).

**Public Involvement and Outreach:** Conduct monthly Tracy Technical Advisory Team meetings. Update Tracy Research website information. Publish Tracy Research Volume Series.

**Linkages:** Ecosystem restoration (TDLA). The CHTR studies are a multi-agency program and under review by the IEP program.

**Potential Problems:** Federal and State funding for feasibility study and construction of a new secondary system and holding facilities at the TFCF. Funding for a new Tracy Direct Loss Agreement.

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**Lower San Joaquin Flood Improvements:**

**Activity:** If federal funding becomes available the USACE will complete program management plan (PMP) and feasibility cost share agreement (FCSA) and begin initial stages of San Joaquin River Flood Control Study with local sponsor SDWA (representing 16 reclamation districts).

**Expected Deliverables/Products:** Program management plan and cost share agreement.

**Schedule:** Plan and agreement will be completed by end of federal year 2007 if federal funding becomes available.

**Cost:** \$0.3 mil (\$0.15 mil federal unfunded at this time; \$0.15 mil local)

**Public Involvement and Outreach:** Local consensus meetings with concerned stakeholders to develop study priorities and needs.

**Linkages:** Environmental Restoration Program.

**Potential Problems:** No congressional approval of federal funding. No additional State funds identified.

**North Delta Actions** – to improve flood protection and conveyance facilities, water quality, Delta fisheries, and avoid water supply disruptions, to increase the water supply reliability for the SWP and CVP and to enhance the Delta ecosystem.

**Delta Cross Channel Re-Operation and Through-Delta Facility (Delta Improvements Package):**

Activity:

Refine DCC re-operation scenarios and run additional computer simulation modeling to determine water quality benefits. Use RMA's particle tracking model to determine fate of fish under the preferred scenarios for the TDF and DCC re-operation. Complete the USGS contract for the DCC fish study and the regional fish study. Complete analysis of the 2006 fish study and use results to design the 2007 fish study. Create a partnership with the fisheries agencies to study the impacts and benefits of the preferred alternatives for the TDF and DCC re-operation and work toward a comprehensive agreement. Complete the summary report for CALFED's end of phase one (Fall 2007).

Preliminary computer modeling evaluation of the hydrodynamics and water quality affects of various TDF, DCC re-operation and Franks Tract alternatives. Complete the reconnaissance and construction pre-feasibility study for the TDF project. Assemble study results into a pre-feasibility document. Complete administrative procedures, i.e. concept paper, budget change proposal, requesting funds for future years to support the planned tasks for these projects. Regional Field Study: Complete and receive approval of study proposal; field test fish monitoring equipment. In FY 07-08 several studies will be conducted in the north, west and central Delta region to evaluate the behavior/migratory path of salmon and salinity resulting from operation of DCC under varying river flow and tidal conditions; Data obtained from flow and salinity monitoring equipment will be analyzed in conjunction with the results from the above mentioned studies to determine recommended operation of DCC. Franks Tract: Work on the Franks Tract project will include collection and analysis of flow and salinity data from stations in the Central and North Delta, refinement of the numerical model to study the effect of pilot project alternatives on the hydrodynamics and salinity in the Franks Tract region. Collection of baseline data for fisheries, Egeria, Corbicula, mercury methylation, dissolved organic carbon will be started. The CEQA/NEPA process will also be initiated during the fiscal year.

Expected Deliverables/Products: Preliminary computer modeling evaluation of the hydrodynamics and water quality affects of various TDF, DCC re-operation and Franks Tract alternatives. These preliminary modeling results will inform decisions regarding the pre-feasibility of the TDF. Completion of the reconnaissance and construction pre-feasibility study for the TDF project and assemble into a report. Completion of administrative procedures, i.e. concept paper, budget change proposal, requesting funds for future years to support the planned tasks for these projects. Regional Field Study: Monitoring data for salinity and flow through the year; analysis of salinity and flow data; purchase of flow and fish monitoring equipment; report for testing of flow and fish monitoring equipment; completed regional study proposal. Franks Tract: report for model study for impacts of pilot project on Delta hydrodynamics; partial baseline data for fisheries, Egeria, Corbicula, mercury methylation, dissolved organic carbon, and initiation of CEQA/NEPA process.

Schedule: See above and discussion under "Schedules."

Cost: Pre-feasibility TDF study \$0.18 mil (State), \$0.4 mil (federal); DCC budget is \$2 mil; TDF budget is \$3 mil

Public Involvement and Outreach: Conduct public and technical advisory outreach efforts to obtain feedback regarding different aspects of the project. Franks Tract - As part of the CEQA/NEPA process, meetings with be arranged in the Central Delta region to discuss the potential pilot project with the public and all responsible agencies.

Linkages: Water Quality Program and Environmental Restoration Program.

Potential Problems: DCC operation and salmon monitoring study is planned to be done in fall of 2007. This study is dependent upon coordination of water releases, of water releases, pumping and DCC operations.

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**Frank's Tract (Delta Improvements Package):**

Activity: Collaborate with fisheries agencies to develop operations of FTTP to benefit fisheries and minimize impacts. Perform hydrodynamic model studies to using extended years of data, and develop operations of FTTP in coordination with fisheries agencies, SWP and water contractors.

1. Develop a long term monitoring program from the FTTP.
2. Preliminary design of FTTP.
3. Baseline data collection and preparation of EIR/EIS for FTTP.
4. Analyze flow and salinity data collected using the monitoring stations installed in previous year.
5. Conduct a regional fish study to understand the migratory behavior of fish in Delta. This will guide the development of operation of FTTP.
6. Complete the summary report for CALFED's end of phase one (Fall 2007).
7. Secure fund for construction of FTTP from State, Federal, and water contractors.

Cost: \$7.1 mil (State) and \$0.9 mil (SWP), includes regional field study.

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**North Delta Flood Control and Ecosystem Restoration Project:**

Activity: Complete North Delta Flood Control and Ecosystem Restoration Public Draft EIR. Secure implementation funding and long-term owner for McCormack-Williamson Tract and Staten Island properties.

Expected Deliverables/Products: Public Draft EIR; Final Draft EIR

Schedule: Public Draft EIR- October 2007; Final Draft EIR- October 2008

Cost: \$0.47 mil (State – general fund) for DWR staff

Public Involvement and Outreach: Participation is achieved through meetings of the North Delta Improvements Group, North Delta Agency Team and the Mokelumne-Cosumnes Watershed Alliance. Participants include DWR, DFG, State Lands Commission, RWQCB, Delta Protection Commission, Reclamation Districts, USFWS and National Marine Fisheries Service.

Linkages: The development of North Delta Flood Control and Ecosystem Restoration Project is expected to result in ecosystem improvements in the Delta. This project will be coordinated with the Ecosystem Restoration Program. The North Delta Flood Control and Ecosystem Restoration Project will have direct and indirect land-use implications for rural communities and agricultural landowners in the Delta. This projects' planning and development efforts will be coordinated with the Bay-Delta Public Advisory Committee's Working Landscape Subcommittee to integrate, to extent reasonably possible, a working landscape approach to implementation. The North Delta Flood Control and Ecosystem Restoration Project is expected to involve levee improvements in the Delta and will involve coordination with the Levee System Integrity Program.

Potential Problems: No funding is currently available for completion of the EIR beyond completion of Public Draft environmental document. No implementation funding for design and construction has been secured. No long-term landowner for Staten or McCormack-Williamson Tract has been identified. No federal lead agency has been identified. The lack of inclusion of North Delta Flood Control and Ecosystem Restoration Project in the CBDA 10-yr action plan has been perceived by many as general loss of CALFED support.

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**Delta Mendota Canal/California Aqueduct (DMC/CA) Intertie Actions–** to consider the need for two specific SWP/CVP intertie projects which physically connect the SWP and CVP facilities.

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**Delta Mendota Canal/California Aqueduct Intertie (Delta Improvements Package):**

Activity: Complete EIS, re-solicit construction contracts, and initiate construction.

Expected Deliverables/Products: Public draft and final EIS document.

Schedule: Final EIS and ROD (Winter 2007), and award contracts (Spring 2008).

Cost: \$29 mil (\$25 mil (CVP), \$1.29 mil federal, \$2.7 mil [No funding source at this time]).

Public Involvement and Outreach: Preparation and release of public information notices, public review and comment on draft environmental documentation.

Linkages: No linkages have been identified.

Potential Problems: Additional court injunction or action preventing construction.

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**Clifton Court Forebay / Tracy Pumping Plant Intertie:**

Activity: Work on this project has not yet commenced.

**Complementary Actions** - to consider actions that were identified in the Framework for Action but were not analyzed in the Final Programmatic EIR/EIS

**Temporary Barriers Project:**

Activity: Continue the south Delta temporary barriers installation to improve water levels for south Delta diverters. Coordinate with various regulatory agencies and south Delta diverters to resolve any water level and water quality issues that might arise.

Expected Deliverables/Products: Install, operate, and remove barriers. Prepare regular reports.

Schedule: The operation of the HORB, MR, and DMC barriers typically begins on April 15 each year. The operation of the GLC barrier begins on June 1. The removal of the spring HORB generally begins May 16 each year. The removal of the Ag barriers begins early November. The operation of the fall HORB begins mid-September and the removal begins early November.

Cost: \$6.6 mil (SWP)

Public Involvement and Outreach: Coordinate with South Delta Water Agency, local landowners, and Reclamation Districts.

Linkages: The Delta smelt Biological Opinion, water quality, and river flows, governs the installation, operation, and removal of the barriers.

Potential Problems: Naturally occurring high flows in the San Joaquin River that impact installation, and low summer flows that reduce water quality and may require barrier re-operations. Delta smelt abundance and salvage impact barrier installation and culvert operations, and may require removal as the most extreme measure.

**Additional Actions Under Delta Improvement Package** - actions to increase water supply reliability, improve water quality, protect important fish species, and maintain the integrity of the levee systems in the Delta

**Study of South Delta Hydrodynamics, Water Quality, and Fish:**

(See Clifton Court Fish Screens and 10,300 cfs)

**Study of Delta Smelt and Fish Facilities:**

(See Tracy Test Facility)

**CCWD Alternative Intake Project:**

Activity: Secure appropriate permits (water rights modification, biological opinions, etc.). Issuance of ROD by Reclamation. Initiate land acquisition. Complete final design.

Expected Deliverables/Products: 404 Permit, 401 Certification, Section 10 permit, biological opinions, amended water rights, other permits as appropriate (Section 106 concurrence, RWQCB dewatering permit, DFG streambed alteration, SJVAPCD permit, etc.)

Schedule: Complete full design Fall 2007. Begin construction Spring 2008. Project online in 2010.

Cost: \$100 mil (includes planning, design and construction): \$2.5 mil (federal); \$47.5 mil (CCWD); \$50 mil (state) [CCWD is seeking \$50 mil in state funding]

Public Involvement and Outreach: Project outreach has been an important part of the AIP and includes public hearings, a project website that has been maintained throughout project, and ongoing meetings and briefings with stakeholders including the affected landowner, state water contractors, regulatory agencies, fisheries agencies, and other interested parties.

Linkages: The federal CALFED authorization states the AIP should move forward on a schedule consistent with the implementation of permanent operable gates. Both projects now have certified EIRs and are acquiring necessary permits.

Potential Problems: Additional source of funding.

**SWP/CWP Integration Plan** - the use of CVP stored water to meet SWP Delta water quality obligations and SWP export capability for CVP south-of-Delta deliveries.

(Included in the South Delta Improvement Program.)



# Schedule

## Conveyance Program Schedule – Program Plan Year 8

**South Delta Actions** – to increase State Water Project (SWP) and Central Valley Project (CVP) export capability, improve the Delta ecosystem through fish protective measures, and ensure that local in-Delta agricultural water needs are met.

### **South Delta Improvement Program - 8,500 cfs and Permanent Operable Gates:**

DWR certifies Stage 1 EIR, adopt project and file NOD (TBD)  
USBR issues ROD (TBD)  
Permanent operable gate construction (TBD))  
Begin Stage 2 environmental evaluation (TBD)  
Complete Stage 2 environmental evaluation and permitting (December 2010)

### **Clifton Court Fish Screens and 10,300 cfs:**

Study of South Delta Hydrodynamics, Water Quality, and Fish:  
Conduct spring field sampling in South Delta, process samples, examine salvage databases, prepare prelim reports (FY2006)  
Complete lab analyses, analyze all data sets, including hydrodynamic data provided by USGS, incorporate field data into 3-D model, prepare report and manuscript (FY2007)  
Refine 3-D model, review and revise manuscript, make result presentations (FY2008)

### **Tracy Fish Test Facility:**

Continue research activities to further analyze existing facility and improve screening efficiency, field test new trashrack cleaner, and award contracts for new primary and secondary louvers and cleaning system FY 2008  
Construct new secondary system FY2009/10  
Construct new research building FY2007/2008  
Begin construction of Development of Land FY2008  
Execute Tracy Direct Loss Agreement FY2008  
Complete CHTR data collection and analyses January 2007  
Submit final CHTR reports June 2007

### **Lower San Joaquin Flood Improvements:**

Complete program management plan (PMP) and feasibility cost share agreement (FCSA) (FY2007)  
Conduct consensus meetings and development of project plan (FY2007-2008)  
Conduct San Joaquin River Flood Control Study with local sponsor SDWA (FY2008-2009)

**North Delta Actions** – to improve flood protection and conveyance facilities, water quality, Delta fisheries, and avoid water supply disruptions, to increase the water supply reliability for the SWP and CVP and to enhance the Delta ecosystem.

### **Delta Cross Channel Re-Operation and Through-Delta Facility (Delta Improvements Package):**

Perform reconnaissance and construction pre-feasibility study July of 2006 - June 30, 2007.

#### Water Quality Modeling (RMA Contract):

Calibrate Model & develop performance measures January 2006 – March 2006  
Evaluate salinity impacts Franks Tract alternatives April 2006-June 2006  
Evaluate salinity impacts of TDF/DCC project April 2006-June 2007  
Evaluate operation alternatives and optimization January 2006-June 2007  
Simulate multiple water years, drought conditions and levee break scenarios July 2006- March 2007  
Evaluate capabilities of alternatives to manage drought and levee breaks October 2007-June 2008  
Evaluate phased implementation of preferred alternative January 2006 – June 2007  
Implement particle tracking in support of regional fish and water quality study January 2007-September 2007  
Submit draft and final summary reports July 2007 – June 2008

#### Regional Field Study:

Install flow and water quality monitoring stations by June 2006  
Conduct fish monitoring study October 2007 – April 2008  
Fish and water quality data analyses completed March 2008  
Evaluations and recommendations reports: DCC Re-Op August 2008; TDF November 2008

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**Franks Tract Pilot Project (Delta Improvements Package):**

Value Engineering Study (March 2007),  
Start preparation of EIR/EIS (July 2007),  
Draft EIR/EIS (March 2008),  
Develop project operations (August 2007),  
Preliminary Design of FTTP (November 2007),  
Regional Fish Study (Nov07-Jan08)  
Final EIR/EIS (July 2008)  
Final Design of FTTP (July 2008 – June 2009)  
Permits for FTTP (July 2008 – June 2009)  
Construction of FTTP (2010-2011)  
Monitoring (2010-2016)

Perform feasibility study July 2007 – September 2009.

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**North Delta Flood Control and Ecosystem Restoration Project:**

Administrative Draft EIR- June 2006;  
Public Draft EIR without preferred alternative- October 2007;  
Select Preferred Alternative and identify longterm owner – December 2007  
Final EIR- March 2008 (Depending on funding and if preferred alternative selected and longterm owner identified)

**Delta Mendota Canal/California Aqueduct (DMC/CA) Intertie Actions**– to consider the need for two specific SWP/CVP intertie projects which physically connect the SWP and CVP facilities.

**Delta Mendota Canal/California Aqueduct Intertie (Delta Improvements Package):**

Final EIS December 2007.  
ROD February 2008.  
Re-solicit construction contract (TBD)  
Initiate construction September (TBD), complete Intertie construction (TBD).

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**Clifton Court Forebay/Tracy Pumping Plant Intertie:**

Work on this project has not yet commenced.

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**Complementary Actions**

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**Temporary Barriers Project:**

Install and operate the HORB, MR, and DMC barriers April 15 each year through 2009.  
Remove HORB May 16 each year.  
Install and operate the GLC barrier June 1 each year.  
Install fall HORB in mid-September each year.  
Remove the MR and DMC Ag barriers and fall HORB early November each year.

**Additional Actions Under Delta Improvement Package** – objectives that were not analyzed in the final Programmatic EIS/EIR.

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**Study of South Delta Hydrodynamics, Water Quality, and Fish:**

(See Tracy Fish Test Facility)

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**Study of Delta Smelt and Fish Facilities**

(See Clifton Court Fish Screens and 10,300 cfs)

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**CCWD Alternative Intake Project :**

Finalize EIR/EIS Fall 2006 - completed  
Complete Full Design Fall 2007  
Begin Construction Spring 2008  
Project Online as early as 2010

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Schedule Chart is needed here

# Budget

Conveyance	Plan Year 8 (\$ in millions, rounded to nearest \$0.1mil)
State <sup>1</sup>	\$37.7
Federal <sup>2</sup>	\$4.3
Water User <sup>3</sup>	93.1
<b>Available Funding Total <sup>4</sup></b>	<b>\$135.1</b>
<b>Projected Needs Estimate <sup>5</sup></b>	<b>\$53.1</b>
<b>Original ROD Estimate (Aug, 2000) <sup>6</sup></b>	
Notes:	
<sup>1</sup> SDIP-\$26mil; CCFS 10300cfs-\$1.8mil; TFTF \$2.2 mil; DCC Re-Op and TDF, Franks Tract-\$7.7mil	
<sup>2</sup> TFTF-\$1.9 mil; TDF-\$0.4 mil(USBR); DMC/CA Intertie-\$1.29 mil(USBR); CCWD AIP-\$0.5 mil(USBR)	
<sup>3</sup> SDIP-\$9 mil (SWP); Lower San Joaquin-\$0.15 mil (SDWA); DMC/CA Intertie-\$25 mil (CVP); Temporary Barriers-\$6.6 mil (SWP); CCWD AIP - \$48 mil (CCWD); Franks Tract-\$0.9 mil(SWP)	
<sup>4</sup> SDIP-\$35 mil; CCFS 10300cfs-\$1.8 mil; DCC Re-Op and Through Facility, Franks Tract-\$9 mil; TFTF-\$4.1 mil; DMC/CA Intertie \$26.29 mil; Lower San Joaquin \$0.15 mil ; Temporary Barriers-\$6.6mil (SWP); CCWD AIP-\$47.5 mil	
<sup>5</sup> TFTF-\$0.24 mil; DMC/CA Intertie-\$2.7 mil; Lower San Joaquin-\$0.15 mil(USACE); and CCWD AIP - \$50 mil (combine with \$53.1 mil in available funding)	
<sup>6</sup> Original ROD Estimates represents the original Stage 1 funding estimates from the Record of Decision (Aug 2000).	

## Acronyms:

AIP - Alternative Intake Project  
 CCFS – Clifton Court Fish Screens  
 CCWD – Contra Costa Water District  
 CVP – Central Valley Project  
 DCC – Delta Cross Channel  
 DMC/CA – Delta Mendota Canal/California Aqueduct  
 ND FC/ERIP – North Delta Flood Control / Ecosystem Restoration Improvements Program  
 ROD – Record of Decision  
 SDIP – South Delta Improvement Program  
 SWP – State Water Project  
 TDF – Through Delta Facility  
 TFTF – Tracy Fish Test Facility  
 USACE – United States Army Corps of Engineers  
 USBR – United States Bureau of Reclamation

<b>Conveyance</b> (\$ in millions, rounded to nearest \$0.1mil)	<b>Plan Year 8</b>
<b>South Delta Actions</b>	
South Delta Improvement Program (SDIP) 8,500 cfs - Permanent Operable Barriers	\$35.0
Clifton Court Fish Screens / 10,300 cfs	\$1.8
Tracy Fish Test Facility (TFTF)	\$1.8
Lower San Joaquin Flood Improvements	\$0.2
<b>North Delta Actions</b>	
Delta Cross Channel Re-operation (\$2M) and Through Delta Facility (\$3M); Franks Tract (\$8 M)	\$13
North Delta Flood Control and Ecosystem Restoration Improvement Program (ND FC ERIP)	\$0.4
<b>Delta Mendota Canal/California Aqueduct (DMC/CA) Intertie Actions</b>	
Delta Mendota Canal / California Aqueduct Intertie	\$26.3
CVP/SWP Clifton Court Forebay Intertie	--
<b>Complementary Actions</b>	
Temporary Barriers	\$6.6
<b>Additional Actions Under Delta Improvement Package</b>	
Study of South Delta Hydrodynamics, Water Quality and Fish (see Clifton Court Fish Screens / 10,300 cfs)	-
Study of Delta Smelt and Fish Facilities (see TFTF)	-
Contra Costa Water District Alternative Intake Project (CCWD AIP)	\$50
<b>State Water Project/Central Valley Project Integration Plan</b>	
State Water Project/Central Valley Project Integration Plan (see SDIP)	-
<b>Available Funding Total</b>	<b>\$135.1</b>
<b>Projected Needs Estimate <sup>1</sup></b>	<b>\$53.1</b>
<b>Original ROD Estimate (Aug, 2000) <sup>2</sup></b>	
Notes:	
<sup>1</sup> TFTF-\$0.24 mil; DMC/CA Intertie-\$2.7 mil; Lower San Joaquin-\$0.15 mil(USACE); and CCWD AIP - \$50 mil - (combine with \$53.1mil in available funding)	
<sup>2</sup> Original ROD Estimates represents the original Stage 1 funding estimates from the Record of Decision (Aug 2000).	